Amendments to the Claims

Claims 1, 3, 4, 5, 7 and 8 are amended, claim 9 has been canceled and claim10 has been added as shown below. A complete listing of the claims in this case, with their status, is shown below.

1. **(Currently Amended)** A method of determining the likelihood of a saccharide composition of a candidate glycan comprising:

providing a search mass of a glycan whose composition is to be determined;

generating a list of possible glycans made up of components, including monosaccharides, whose total mass is within a predetermined tolerance of the search mass;

selecting a reference group of known characterised glycans ;

establishing the mean and standard deviation of each component appearing in the reference group of the known characterised glycans ;

for each candidate glycan ~~calculating~~ **calculating** a partial score for each component in that theoretical glycan candidate, the partial score being calculated from the mean and standard deviation of the component appearing in the reference group and which provides a measure of the likelihood of that component being present in the candidate glycan ;

combining the partial scores to provide an indication of the likelihood of that candidate glycan occurring.

2. (Previously Presented) A method as claimed in claim 1 wherein the reference group of glycans comprises glycans of approximately similar mass to the search mass.

3. **(Currently Amended)** A method as claimed in claim 1 ~~or 2~~ wherein the partial scores for each component are based on the difference between the observed number of the component in the candidate glycan composition and the mean for that component in the reference group, divided by the standard deviation and wherein the combining of the partial scores is carried out by multiplying the partial scores together.

4. **(Currently Amended)** A method as claimed in claim 1 ~~or 2~~ wherein the partial score for each component is calculated according to the equation:-

$$partialscore_{monosac} = \frac{|mean_{monosac} - observed_{monosac}|}{stdev_{monosac}}$$

where $mean_{monosac}$ is the mean number of the given monosaccharide in the reference data set; $observed_{monosac}$ is the number of the given monosaccharide in the

candidate glycan; and $stddev_{monosac}$ is the standard deviation of the given monosaccharide in the reference data set.

5. **(Currently Amended)** A method as claimed in claim 1 ~~or 2~~ wherein the partial score for each component is calculated according to the equation:-

$$\text{PartialScore}_m = \frac{e^{-\frac{1}{2}(StDevScore_m)^2}}{\sqrt{2\pi} \times stdev_m}$$

where $\text{StDevScore}_m = \text{Abs}(\text{count}_m - \text{mean}_m)/\text{stdev}_m$

6. (Previously Presented) A method as claimed in claim 5 wherein the probability of the candidate glycan or "biological index" is calculated according to the equation:

$$\text{biological index} = \frac{1}{\ln\left(\prod_{m \in monosaccharides} PartialScore_m\right)}$$

7. **(Currently Amended)** A method as claimed in ~~any one of claims 1 to 6~~ **claim 6** wherein the predetermined tolerance of the search mass is within +/- 400Da, preferably +/- 200Da.

8. **(Currently Amended)** A system for determining the likelihood of ~~saccharide~~ **a saccharide** composition of a candidate glycan comprising:

a means for receiving an input search mass of a glycan whose composition is to be determined; ~~**a computer means running software implementing the method of any one of claims 1 to 7.**~~

means for generating a list of possible glycans made up of components, including monosaccharides, whose total mass is within +/-400Da of the input search mass;

means for selecting a reference group of known characterised glycans of the approximately similar mass to the mass of the input search mass;

means for calculating the mean and standard deviation of each component appearing in the reference group of the known characterised glycans;

means for calculating, for each candidate glycan, a partial score for each component in that candidate glycan, the partial score being calculated from the mean and standard deviation of the component appearing in the reference group to provide a measure of the likelihood of that component being present in the candidate glycan ;

means for combining the partial scores to provide an indication of the likelihood of that candidate glycan occurring.

9. **(Cancelled)**

10. **(New)** A method of determining the likelihood of a saccharide composition of a candidate glycan comprising:

providing a search mass of a glycan whose composition is to be determined;

generating a list of possible glycans made up of components, including monosaccharides, whose total mass is within +/- 400Da,of the search mass;

selecting a reference group of known characterised glycans, the reference group comprising glycans of approximately similar mass to the search mass;

establishing the mean and standard deviation of each component appearing in the reference group of the known characterised glycans ;

for each candidate glycan calculating a partial score for each component in that theoretical glycan candidate, the partial score being calculated from the mean and standard deviation of the component appearing in the reference group and which provides a measure of the likelihood of that component being present in the candidate glycan ;

combining the partial scores to provide an indication of the likelihood of that candidate glycan occurring.